E/CONF.39/C/428
SUMMARY
1 Nov.1962
ORIGINAL : ENGLISH

UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

SUMMARY

Agenda Item: C.5.3

United States of America

SCIENTIFIC DEVELOPMENTS IN PASTURE AND FORAGE PRODUCTION

By Glenn W. BURTON,
Principal Geneticist,
U.S. Department of Agriculture
and University of Georgia,
Tifton, Georgia

Papers have been contributed to the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas as working papers for that Conference. They are published as presented by the contributors, and the contents and the views expressed are those of the contributors. (See notes overleaf.)

NOTES

1. Papers selected for inclusion in General Sessions will be available at the Conference in the following official languages of the United Nations: English, French, Russian and Spanish.

2. Papers selected for inclusion in Specialized Sessions will be available at the Conference in only one of the above official languages.

3. Summaries of all papers, as submitted by contributors, will be available at the Conference in the following official languages of the United Nations: English, French, Russian and Spanish.

4. Papers and summaries will not be available for general distribution in advance of the Conference. They will be published in advance in limited quantities only for the use of delegations of participating governments and of other authorized participants. Post-Conference publication and general distribution of the Conference Proceedings will follow United Nations practices as laid down by the United Nations Publications Board.

SCIENTIFIC DEVELOPMENTS IN PASTURE AND FORAGE PRODUCTION

Glenn W. Burton, Principal Geneticist
U.S. Dept. of Agriculture and University of Georgia, Tifton, Georgia

1. Permanent pasture, occupying 1/5 of the total land area of the world, still remains man's most neglected crop. In vast areas overgrazing has resulted in tremendous loss of grass, soil, water, and animal product. Even in such a scientifically advanced country as Britain, Davies estimates pasture production could be increased 3- to 12-fold by nation-wide adoption of scientific developments now available. In many less developed areas the increases are potentially much greater, since limited research confirms Stapledon's contention that: "the basic principles of growing grass are the same the world over." Some of the scientific developments for increasing pasture and forage production discussed in this paper may be summarized as follows:

(a) Proper stocking of natural grasslands is the key to their maximum production. Most of the forage produced on heavily overgrazed pastures only keeps animals alive and hence supplies no food for man. Animal numbers must be adjusted to utilize as much forage as possible without permitting long-time adverse effects on forage plants and grazing animals. Reducing animal numbers or grazing days in overgrazed areas will increase the production of grass and animal product.

(b) Controlling bush and weeds with proper grazing management, mechanical means such as mowing, herbicides, and fire can increase pasture production materially. Only with good grazing management can benefits from bush and weed control be sustained.

(c) Introducing better forage species, particularly in the humid regions, can increase forage production several fold.

(d) Breeding can develop new varieties and hybrids with such desirable traits as increased yield, greater longevity, more disease resistance, better seasonal distribution, and greater efficiency in water and fertilizer use. Coastal bermudagrass, a plant breeding product, produces twice as much forage as common bermudagrass in wet seasons and up to six times as much in dry seasons.

(e) Fertilizing efficient forage plants properly can increase yields many fold where water is adequate. Forage plants differ greatly in fertilizer efficiency. Native grasses in Georgia, U.S.A., respond very little to fertilizer. Their annual production of 12 pounds of liveweight gain per acre has been increased 57-fold by grazing Coastal bermudagrass fertilized with 200 pounds of nitrogen and 500 pounds of 0-10-20 per acre.

(f) Irrigating where water is short always increases forage production. By irrigating the best varieties, with proper fertilization and management,

it is often possible to increase production over the unfertilized native forages many fold.

(g) Supplementing pasture in off-season permits heavier stocking during the growing season when forage quality is highest and thus increases grassland yields.

(h) Utilizing forage at a stage that gives maximum yields of digestible nutrients will result in the greatest production of animal product. Young grass will give much better animal response than old, stemmy grass.

2. The program for maximum grassland production must include a combination of all desirable practices that will apply in any area. It can be most efficiently developed by applied grassland research conducted in each area that differs significantly in soil, climate, and natural vegetation. Mass dissemination of the best grassland production programs by teaching methods better than the best available today will be required to realize the full potential of world pastures.

S - 1490 E - Nov.1962 - 1,600